

Ecosystem Amendment Update – Continuation from August Council Meeting

Agenda Item 9

September 27, 2018



Guide to Today's Discussion

- Continuation of August 2018 Council item
- Outreach summary
- Key stakeholder themes
- Ecosystem Amendment context and vision
- Review existing and proposed policies and recommendations related to physical habitat aspects of Ecosystem Amendment
- Implementation aspects and Performance Measures @ November 2018 Council meeting

Ecosystem Amendment Outreach

- Council listening sessions
- Staff briefings and outreach
- Ongoing outreach through selected forums
- Interagency Committee meetings
- Council meetings
- Ecosystem Amendment open house



Ecosystem Amendment Outreach

Listening sessions and targeted outreach have included the following entities:

- State and federal wildlife agencies
- California Natural Resources Agency
- NGOs (Audubon, American Rivers, Public Policy Institute, Yolo Basin Foundation etc.)
- County Planning Offices
- County Ag Commissioners
- California Biodiversity Council Interagency Advisory Team
- Suisun Marsh Principles
- Delta Protection Commission (DPC) – staff and Commission
- Sacramento-San Joaquin Delta Conservancy – staff and Board
- State Water Contractors

(See July 2018 Council meeting staff report for detailed list of outreach)

Ecosystem Amendment Outreach - Key Stakeholder Themes

- 1. Natural Communities:** Broaden the focus beyond fish to include other natural communities. Further define multi-benefit habitat restoration projects (e.g., flood protection and fish habitat) in the context of the Delta.
- 2. Natural Resource Management:** Use innovative, evidenced-based approaches to: a) Move beyond mitigation; mitigation is intended to maintain the existing conditions, and is not the same as restoration; b) Focus on ecological function and process when undertaking restoration; and c) Consider how working lands can improve restoration opportunities, in particular those lands which are adjacent to conservation lands.
- 3. Landscape Outcomes:** Develop clear and “SMART” ecological goals and objectives that are measurable, using best available science.

Ecosystem Amendment Outreach - Key Stakeholder Themes

4. **Role of the Delta.** Within a broader context, consider what will be needed to support populations of wildlife and fish given recent landscape-scale conservation planning within the Sacramento and San Joaquin River watersheds and other tributaries when defining the scope of restoration within the Delta.
5. **Delta as an evolving place:** a) Consider and respect local land use in restoration planning as is outlined in the existing Delta Plan policy DP P2; b) Comprehensively consider the benefits that restoration can have to society (e.g. cultural values, ecosystem services); c) recognize and increase opportunities for education and nature-based recreation within the Delta; and d) engage local communities in conservation planning, with support for restoration of current public lands.

Ecosystem Amendment – Future Opportunities for Engagement

- **November 2018** – Council meeting discussion on proposed institutional regulatory policies, recommendations, and performance measures
- **January 2019** – Council meeting discussion on Public Draft Ecosystem Amendment; Public comment period on Draft Ecosystem Amendment
- **February 2019** – Public workshop on Draft Ecosystem Amendment
- **March 2019** – Council meeting and project description approval
- **March – Fall 2019** – CEQA including public comment and meetings

The Delta Reform Act 2009 provides goals, strategies for protecting, restoring and enhancing the Delta Ecosystem:

- **Coequal Goals**
- **Target Characteristics:**
 - Viable populations of native resident and migratory species
 - Functional corridors for migratory species
 - Diverse and biologically appropriate habitats for ecosystem process
 - Reduced threats and stresses on the Delta Ecosystem
 - Conditions conducive to meeting or exceeding recovery plans and salmon doubling goals
- **Strategies to achieve characteristics:**
 - Restore large areas of interconnected habitats within the Delta and its watershed by 2100.
 - Establish migratory corridors for fish, birds, and other ecosystems.
 - Improve water quality for drinking, ag, and ecosystem
 - Restore habitat necessary to avoid a net loss of migratory bird habitat and, where feasible, increase migratory bird habitat to promote viable populations of migratory birds.
- **Use best available science**
- **Quantified or measurable targets**
- **Science-based, transparent, and formal adaptive management strategy**

Delta Plan Chapter 4 Provides a Vision for a Restored Delta:

“Achieving the coequal goal of ecosystem protection, restoration, and enhancement means successfully establishing **a resilient, functioning estuary and surrounding terrestrial landscape capable of supporting viable populations of native resident and migratory species with diverse and biologically appropriate habitats, functional corridors, and ecosystem processes.**”



Delta Plan Chapter 4 Defines Restoration, Protection, and Enhancement:

WHAT DOES IT MEAN TO ACHIEVE THE GOAL OF PROTECTING, RESTORING, AND ENHANCING THE DELTA ECOSYSTEM?

Achieving the coequal goal of ecosystem protection, restoration, and enhancement means successfully establishing a resilient, functioning estuary and surrounding terrestrial landscape capable of supporting viable populations of native resident and migratory species with diverse and biologically appropriate habitats, functional corridors, and ecosystem processes.

For this purpose, the term “restoration” is defined in Water Code section 85066 as follows:

“the application of ecological principles to restore a degraded or fragmented ecosystem and return it to a condition in which its biological and structural components achieve a close approximation of its natural potential, taking into consideration the physical changes that have occurred in the past and the future impact of climate change and sea level rise.”

Restoration actions may include restoring interconnected habitats within the Delta and its watershed, restoring more natural Delta flows, or improving ecosystem water quality.

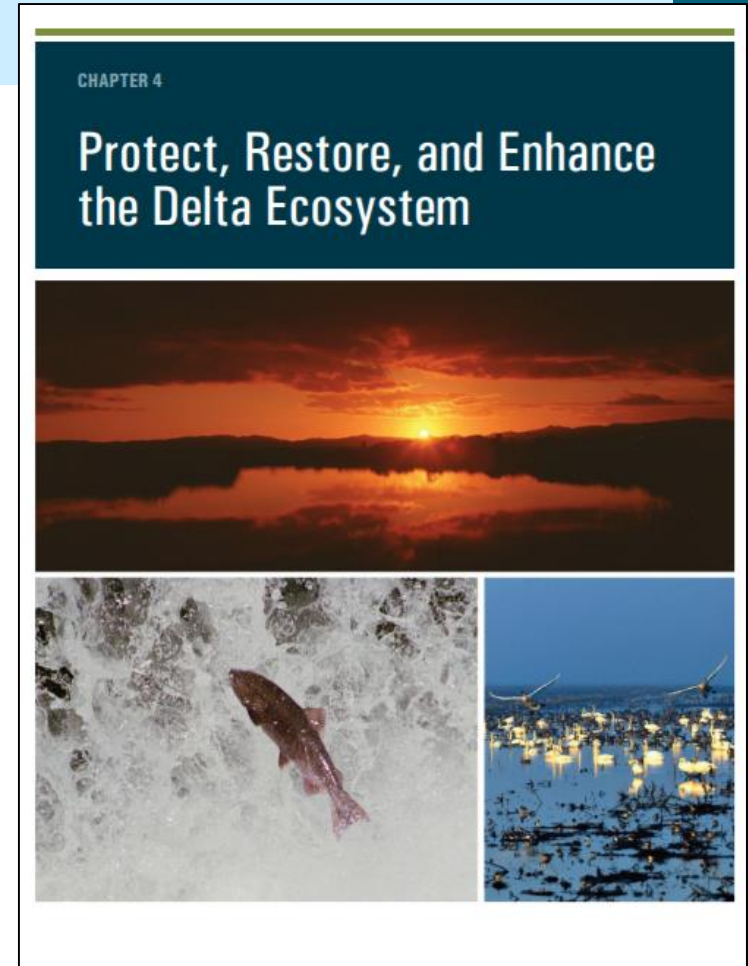
“Protection” means preventing harm to the ecosystem, which could include preventing the conversion of existing habitat, the degradation of water quality, irretrievable conversion of lands suitable for restoration, or the spread of invasive nonnative species.

“Enhancement” means improving existing desirable habitat and natural processes. Enhancement might include flooding the Yolo Bypass more often to support native species, or to expand or better connect existing habitat areas. Enhancement includes many fish and wildlife management practices, such as managing wetlands for waterfowl production or shorebird habitat, installing fish screens to reduce entrainment of fish at water diversions, or removing barriers that block migration of fish to upstream spawning habitats.

What's Currently in the Delta Plan?

Core Strategies

- Create more natural functional flows
- Restore habitat
- Improve water quality to protect the ecosystem
- Prevent introduction of and manage non-native species impacts
- Improve hatcheries and harvest management

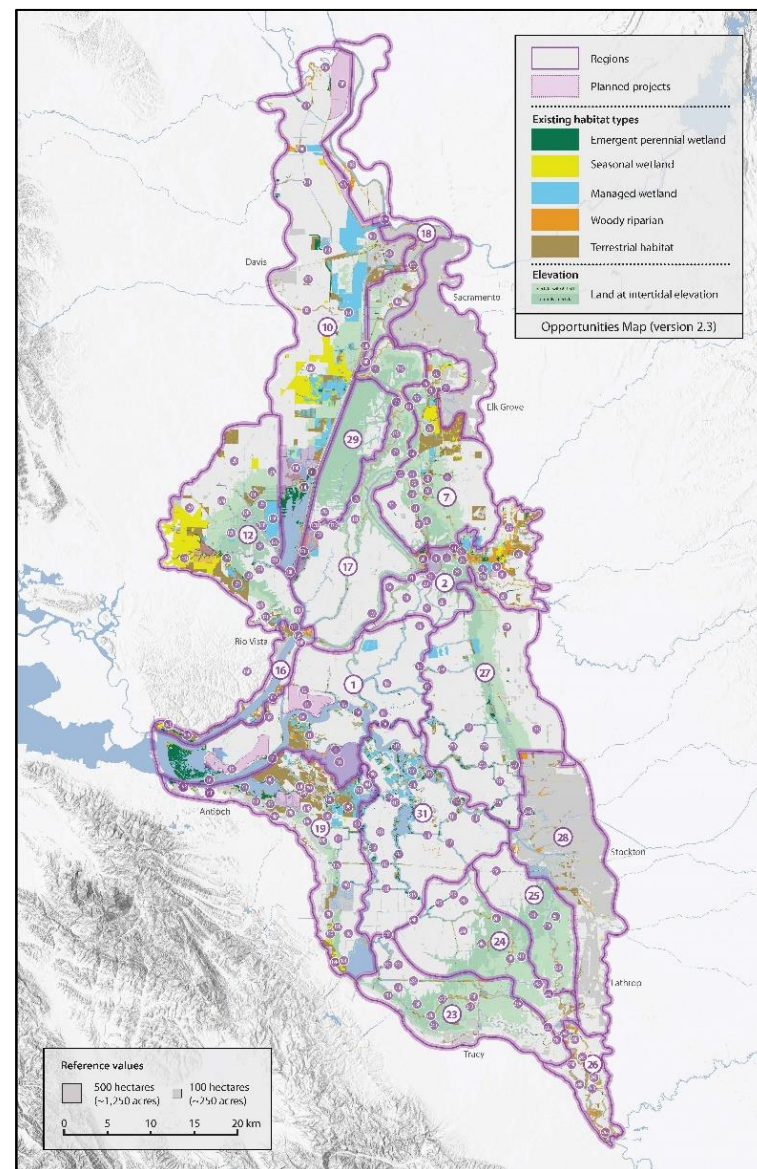


Regulatory policy and recommendation framework that provides high-level restoration guidance (e.g., ER P2, Appendix 3) & focuses on the protection of opportunities for ecosystem restoration

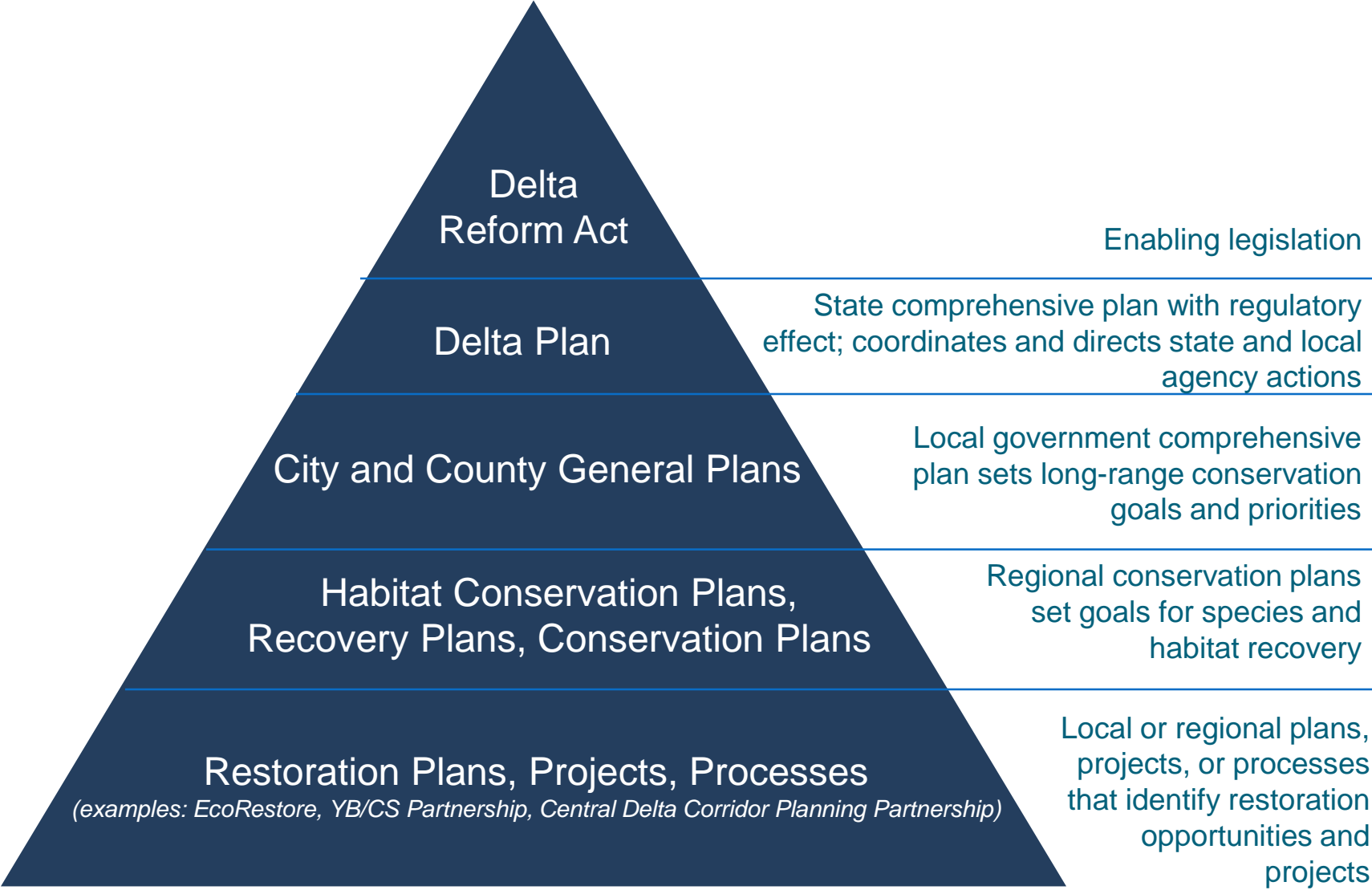
Updating the Delta Plan to Achieve the Vision

Regulatory policy and recommendations which guide and align ecosystem restoration planning activities and public funding:

- **What:** Priority restoration actions & conservation targets focused on ecosystem uplift
- **Where:** Regional land-use/land ownership and landscape suitability
- **When:** 2030, 2050, 2100

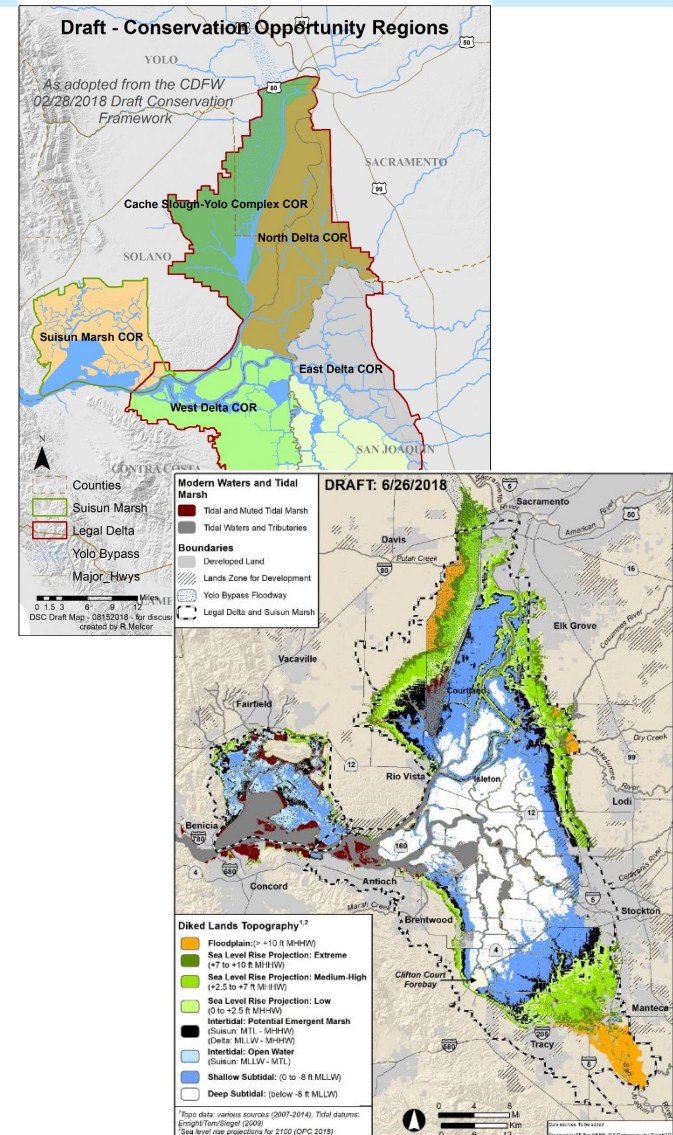


Hierarchy of Restoration and Conservation Planning Efforts



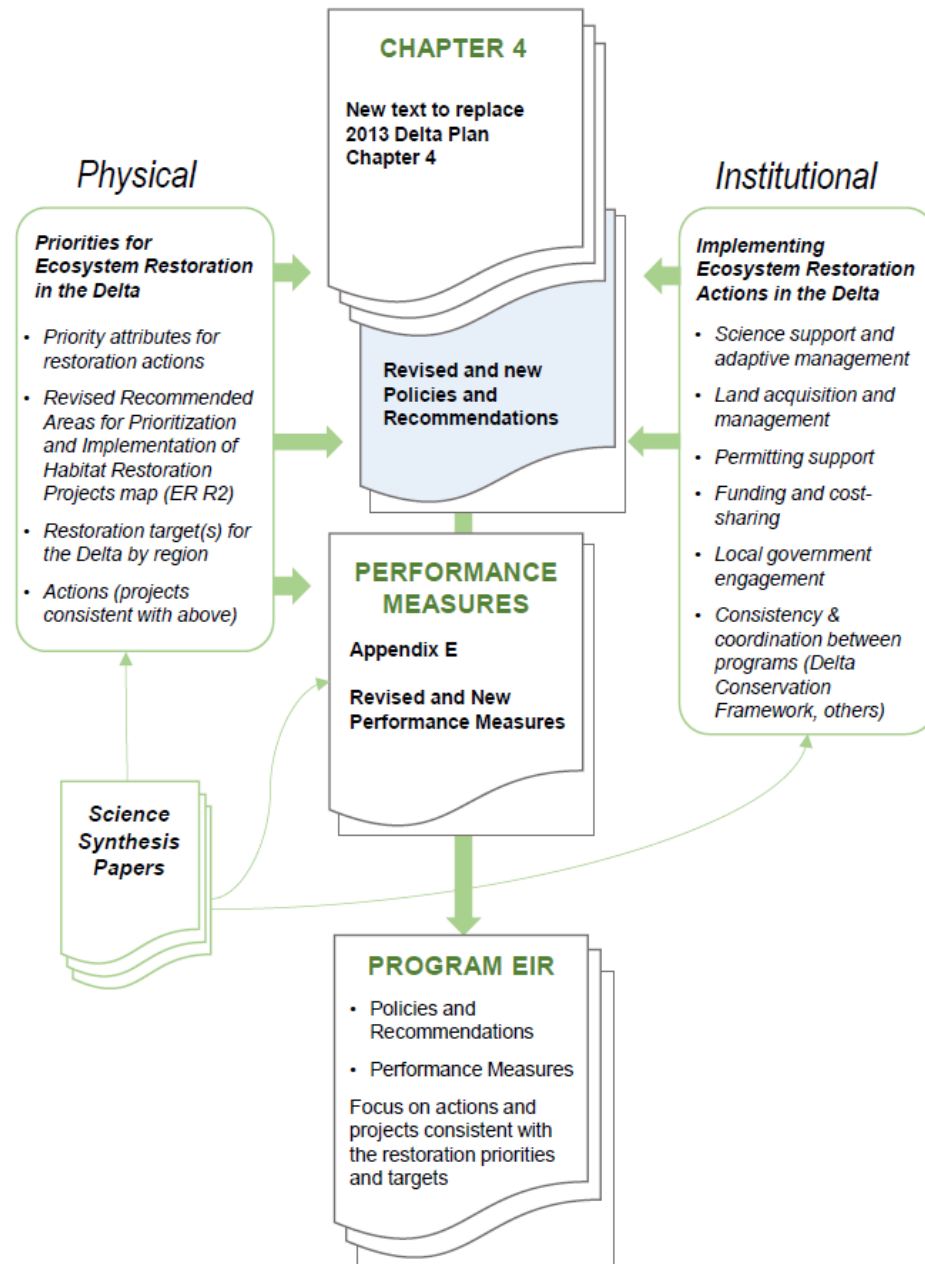
A Path Forward: Policy Approaches Discussed at the August Council Meeting

- Achieve the Delta Reform Act vision for the ecosystem – Go beyond mitigation
- Emphasize ecosystem function
- Address sea-level rise and subsidence
- Leverage recovery and conservation plans
- Identify restoration/conservation opportunity regions

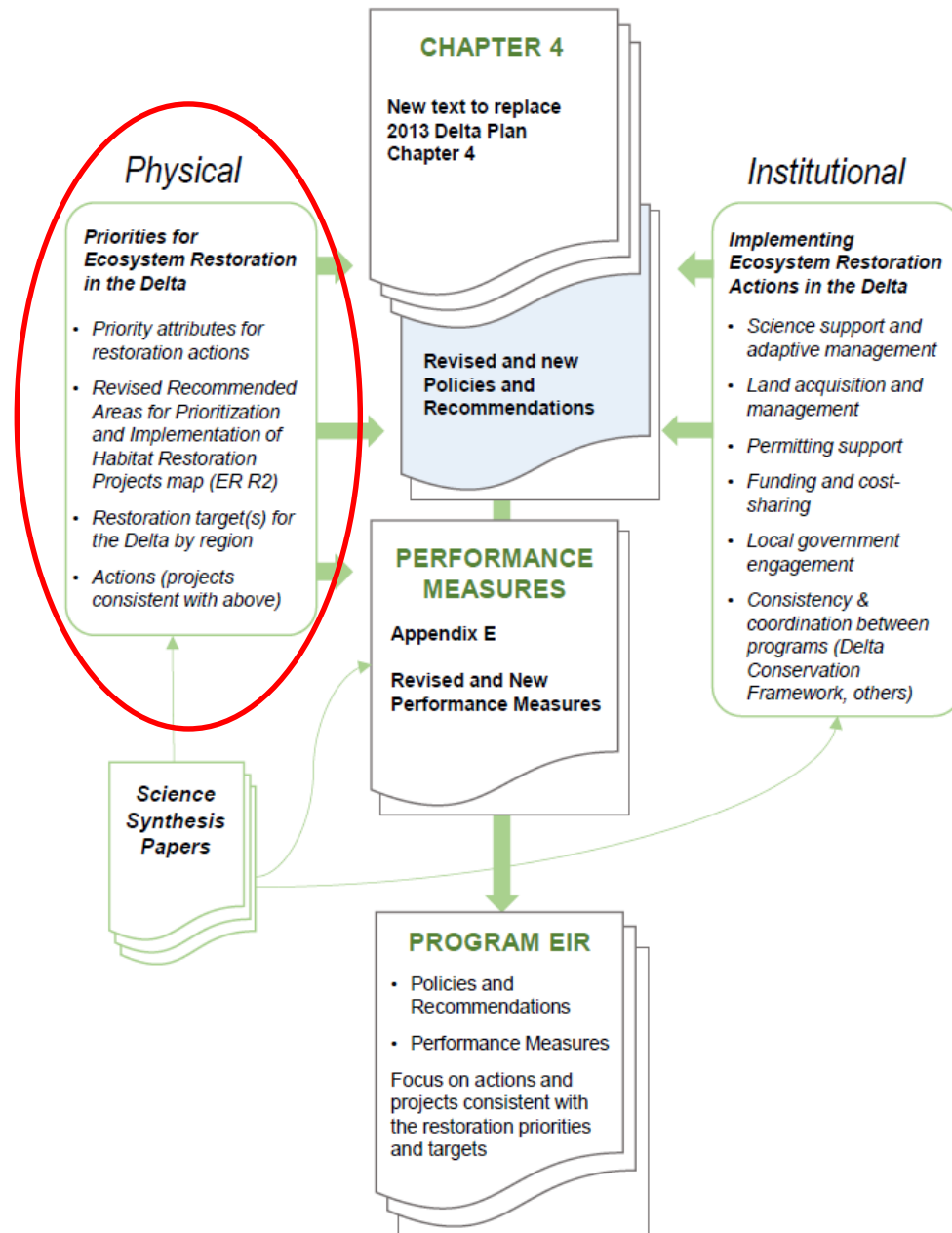


Setting Direction with Regulatory Policies and Recommendations

Ecosystem Amendment Blueprint



Ecosystem Amendment Blueprint



Plans, Programs, and Projects – Covered Actions

What is a Covered Action:

- ✓ **Meets the definition of a project under California Environmental Quality Act (Public Resources Code section 21065)**
- ✓ **Will occur, in whole or in part, within the boundaries of the Delta or Suisun Marsh**
- ✓ **Will be carried out, approved, or funded by the State or a local public agency**
- ✓ **Will have a significant impact on the achievement of one or both of the coequal goals or the implementation of a government-sponsored flood control program to reduce risks to people, property, and State interests in the Delta.**

Proposed changes to the physical habitat aspects of policies and recommendations: **ER P1, ER R1**

Existing Chapter 4 Policies and Recommendations

Number	Short Title	Description
Create More Natural Functional Flows		
<i>Altered flows in the Sacramento and San Joaquin rivers and their tributaries change flows within and out of the Delta, and affect salinity and sediment in the Delta. Fish and other aquatic species native to the Delta are adapted to natural flow, salinity, and sediment regimes. Current flow, salinity, and sediment regimes harm native aquatic species and encourage nonnative species. The best available science suggests that currently required flow objectives within and out of the Delta are insufficient to protect the Delta ecosystem (SWRCB 2010). Additionally, uncertainty regarding future flow objectives for the Delta impairs the reliability of water supplies that depend on the Delta or its watershed. The predictability of water exports cannot be improved, and the BDCP cannot be implemented without timely SWRCB action to update flow objectives.</i>		
ER P1	Delta Flow Objectives (23 CCR section 5005)	<p>(a) The State Water Resources Control Board's Bay Delta Water Quality Control Plan flow objectives shall be used to determine consistency with the Delta Plan. If and when the flow objectives are revised by the State Water Resources Control Board, the revised flow objectives shall be used to determine consistency with the Delta Plan.</p> <p>(b) For purposes of Water Code section 85057.5(a)(3) and Section 50031(j)(1)(E) of this Chapter, the policy set forth in subsection (a) covers a proposed action that could significantly affect flow in the Delta.</p>
ER R1	Update Delta Flow Objectives	<p>Development, implementation, and enforcement of new and updated flow objectives for the Delta and high-priority tributaries are key to the achievement of the coequal goals. The State Water Resources Control Board should update the Bay Delta Water Quality Control Plan objectives as follows:</p> <p>(a) By June 2, 2014, adopt and implement updated flow objectives for the Delta that are necessary to achieve the coequal goals.</p> <p>(b) By June 2, 2018, adopt, and as soon as reasonably possible, implement flow objectives for high-priority tributaries in the Delta watershed that are necessary to achieve the coequal goals.</p>

Proposed changes to the physical habitat aspects of policies and recommendations: **ER P1, ER R1**

Proposed Ecosystem Amendment Changes

Number	Description
Create More Natural Functional Flows Revise problem statement to remove reference to BDCP <i>...The predictability of water exports cannot be improved , and the BDCP and restoration programs and other projects cannot be implemented without timely SWRCB action to update flow objectives.</i>	
ER P1	No change proposed - work underway
ER R1	No change proposed - work underway

Proposed changes to the physical habitat aspects of policies and recommendations: **ER P2**

Restore Habitat

Features of the Delta landscape, particularly the condition of its waterways, the elevation of its land, and other environmental conditions, have changed dramatically over the past 160 years. Damage to the habitats that support native species in the Delta has led to declines in native animal and plant populations, affecting both resident and migratory species.

ER P2 Restore Habitats at Appropriate Elevations (23 CCR section 5006)	(a) Habitat restoration must be carried out consistent with Appendix 3 , which is Section II of the Draft Conservation Strategy for Restoration of the Sacramento-San Joaquin Delta Ecological Management Zone and the Sacramento and San Joaquin Valley Regions (CDFW 2011). The elevation map attached as Appendix 4 should be used as a guide for determining appropriate habitat restoration actions based on an area's elevation. If a proposed habitat restoration action is not consistent with Appendix 4 , the proposal shall provide rationale for the deviation based on best available science. (b) For purposes of Water Code Section 85057.5(a)(3) and Section 5001(j)(1)(E) of this Chapter, this policy covers a proposed action that includes habitat restoration.
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Proposed changes to the physical habitat aspects of policies and recommendations: **ER P2**

Restore Habitat

Amend problem statement to emphasize key restoration attributes/priorities:

Current ecosystem restoration efforts in the Delta focus on implementing mitigation requirements to compensate for the permitted impacts to threatened and endangered species. Although mitigation-focused efforts may help meet some ecosystem needs, they do not reflect the science-based restoration approach envisioned in the Delta Reform Act to achieve a resilient and functioning Delta ecosystem with diverse and biologically appropriate habitats, functional corridors, and ecosystem processes.

ER P2 Update elevation map in Appendix 4 (Figure 4-1) to reflect improved scientific understanding of land elevations and sea-level rise.

Proposed changes to the physical habitat aspects of policies and recommendations: **ER P2**

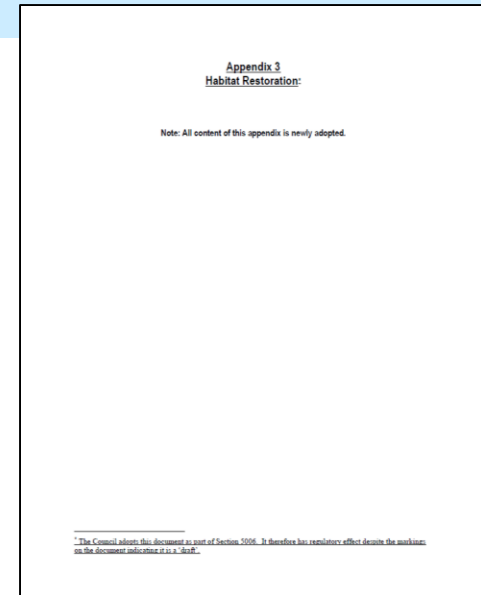
Appendix 3:

Current content:

- Excerpt from the 2011 draft of the Ecosystem Restoration Program Conservation Strategy.
- Provides methods for original habitat elevation map
- Highlights vision and priority actions for CDFW's Stage II Ecosystem Restoration Program funding:
 - Delta Agricultural Lands
 - Delta Upland Areas
 - Dune Scrub Habitat
 - Delta and Suisun Marsh Intertidal Areas

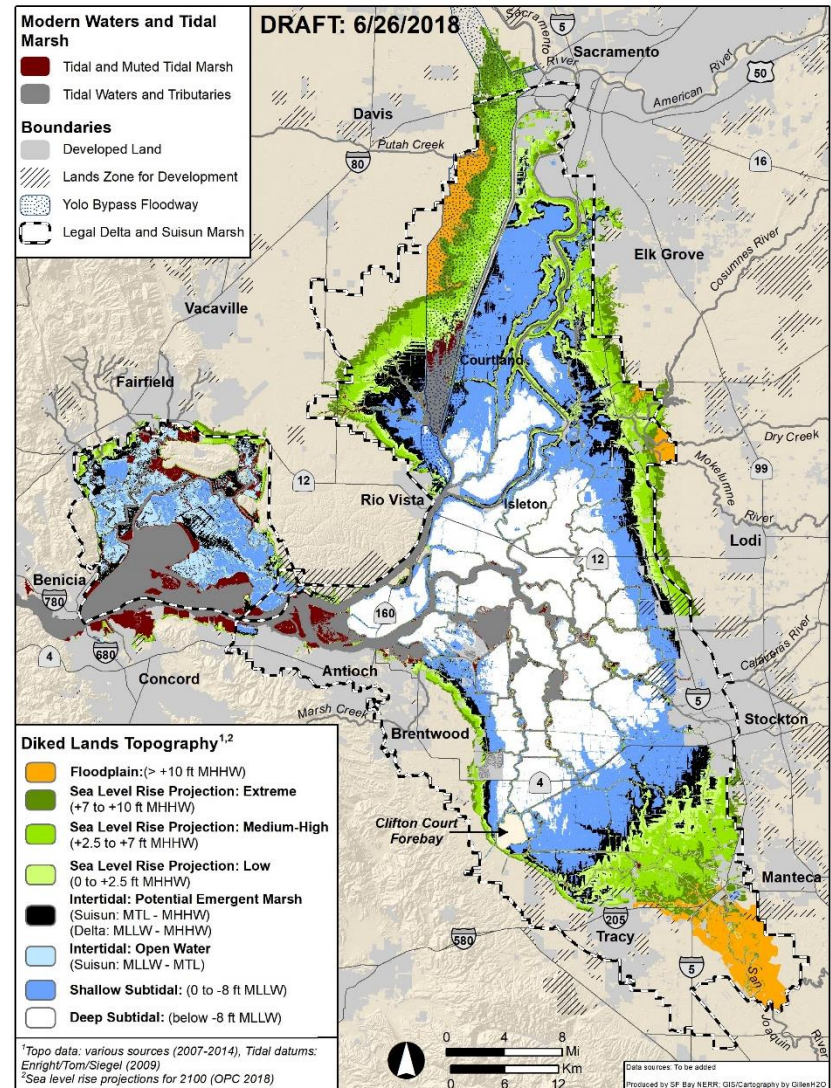
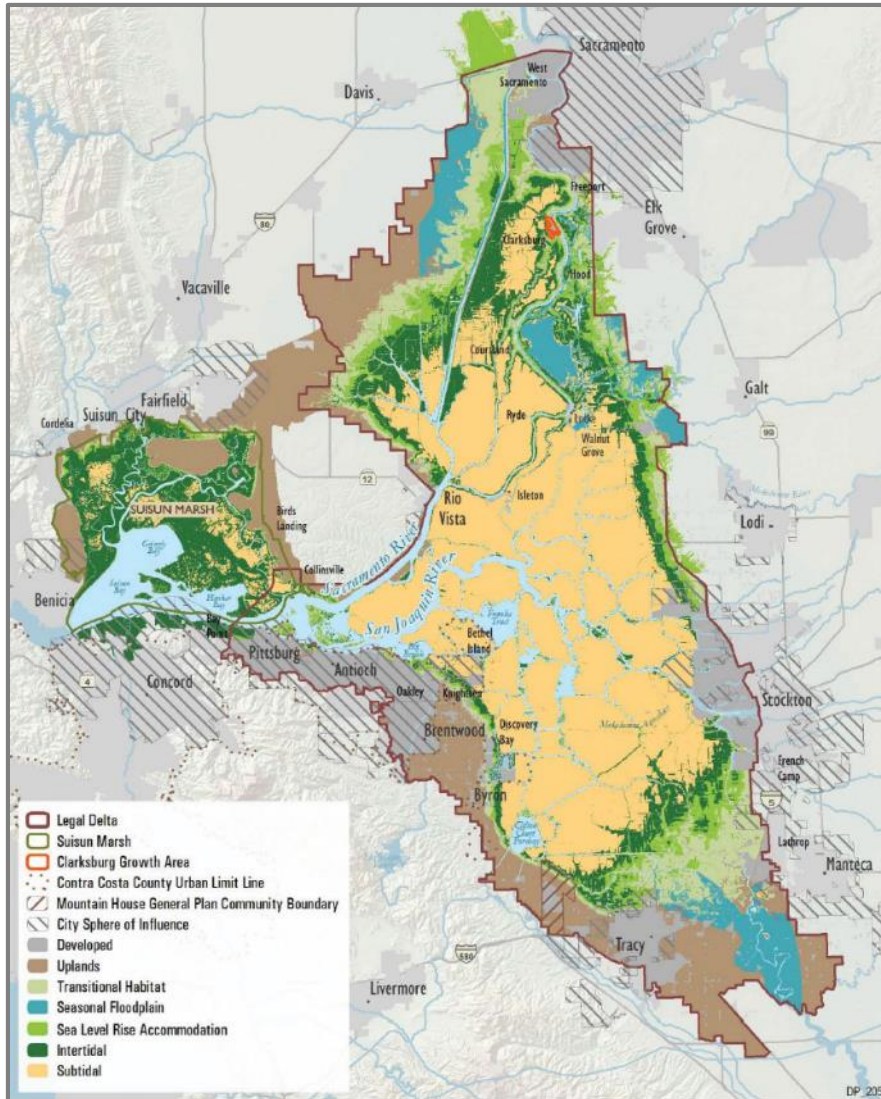
Proposed updates:

- Mapping Methods
- Climate considerations and scientific updates to targeted natural community accounts
- Information needs & implementation considerations



ER P2 – Restore Habitats at Appropriate Elevations

Update Appendix 4:



Proposed changes to the physical habitat aspects of policies and recommendations: **ER P3**

Existing Chapter 4 Policies and Recommendations

Number	Short Title	Description
ER P3	Protect Opportunities to Restore Habitat (23	<p>(a) Within the priority habitat restoration areas depicted in Appendix 5, significant adverse impacts to the opportunity to restore habitat as described in section 5006, must be avoided or</p> <p>(b) Impacts referenced in subsection (a) will be deemed to be avoided or mitigated if the project is designed and implemented so that it will not preclude or otherwise interfere with the ability to restore habitat as described in section 5006.</p> <p>(c) Impacts referenced in subsection (a) shall be mitigated to a point where the impacts have no significant effect on the opportunity to restore habitat as described in section 5006. Mitigation shall be determined, in consultation with the California Department of Fish and Wildlife, considering the size of the area impacted by the covered action and the type and value of habitat that could be restored on that area, taking into account existing and proposed restoration plans, landscape attributes, the elevation map shown in Appendix 4, and other relevant information about habitat restoration opportunities of the area.</p> <p>(d) For purposes of Water Code section 85057.5(a)(3) and section 5001(j)(1)(E) of this Chapter, this policy covers proposed actions in the priority habitat restoration areas depicted in Appendix 5. It does not cover proposed actions outside that area.</p>

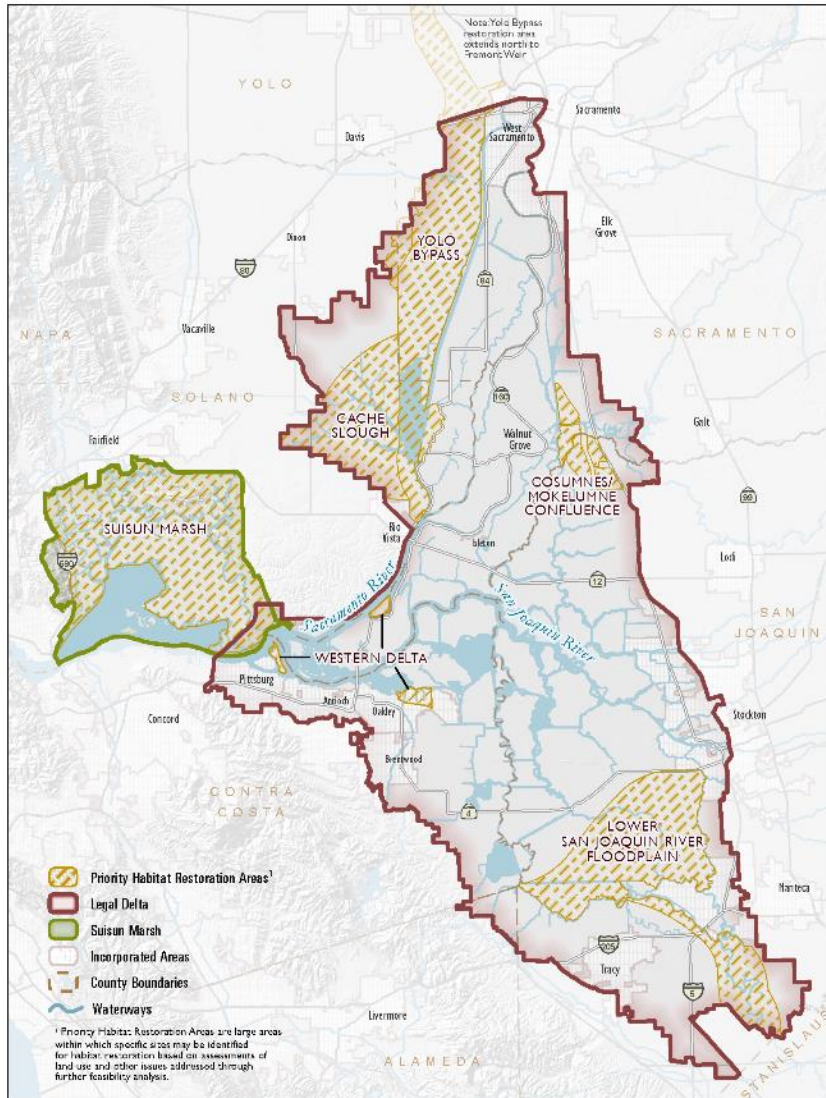
Proposed changes to the physical habitat aspects of policies and recommendations: **ER P3**

Proposed Ecosystem Amendment Changes

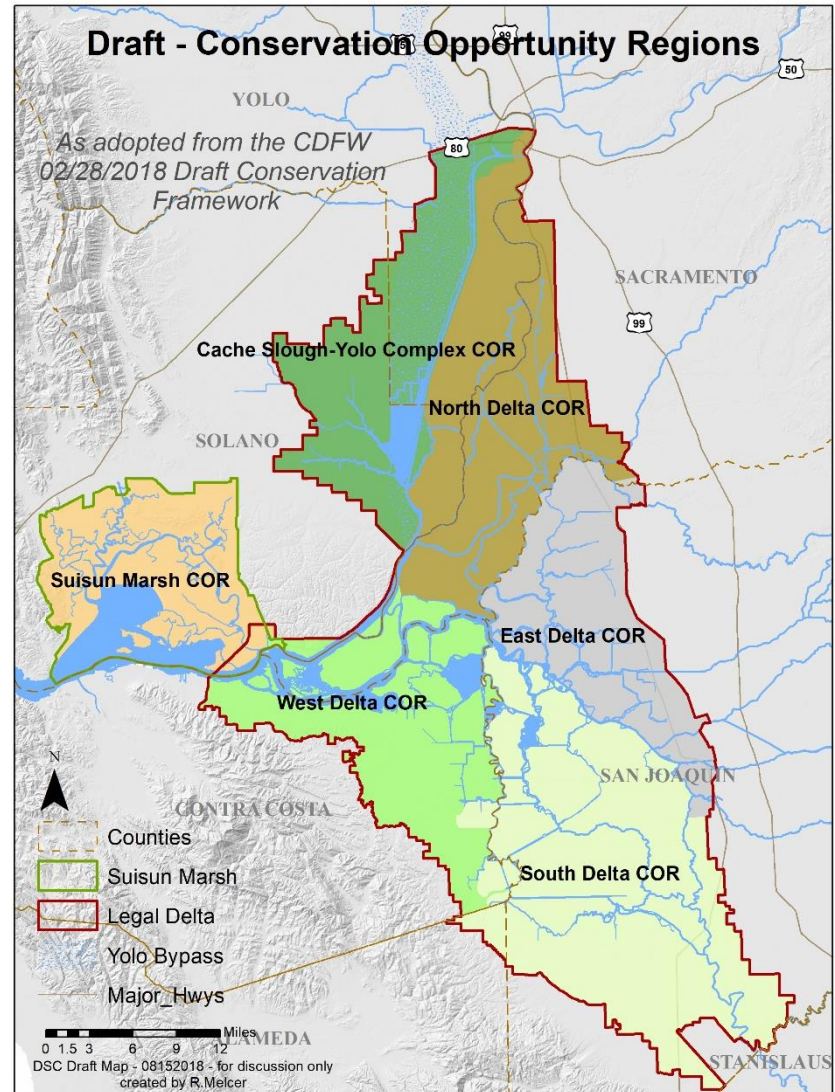
Number	Description
ER P3	Update map of recommended areas for Prioritization and Implementation of Habitat Restoration Projects (Figure 4-8, Appendix 5)

Proposed changes to the physical habitat aspects of policies and recommendations: **ER P3**

Update Appendix 5:



Recommended Areas for Prioritization and Implementation of Habitat Restoration Projects, Figure 4-6



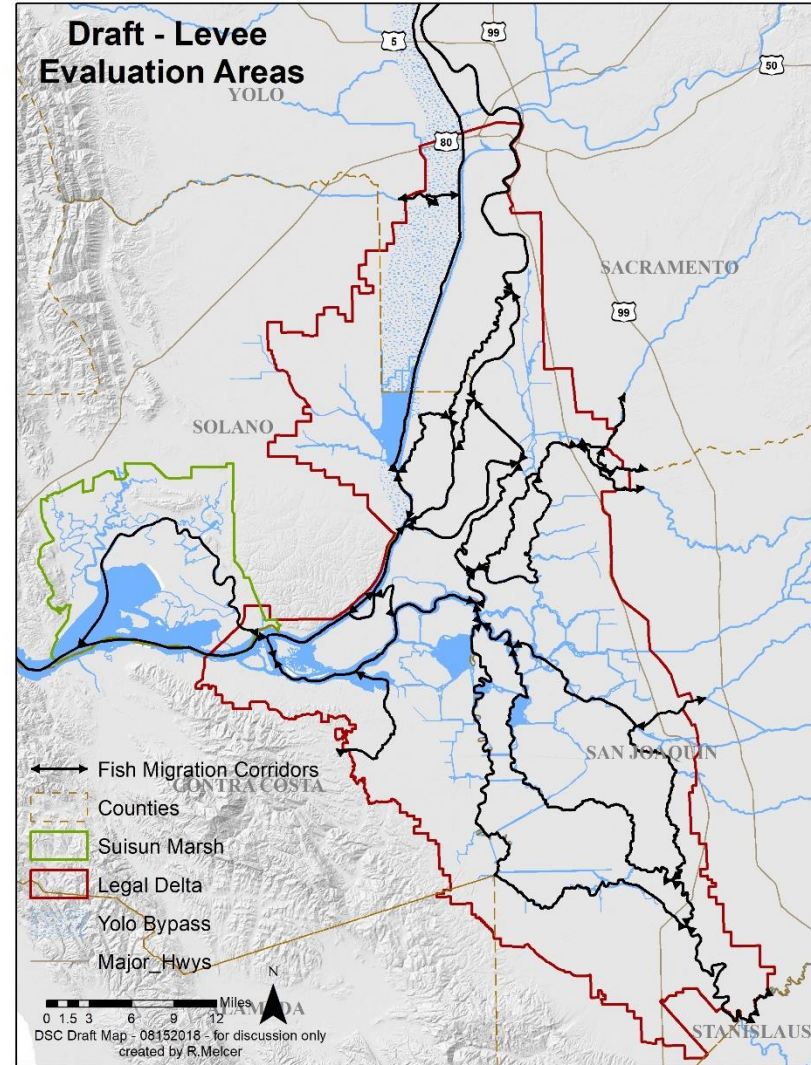
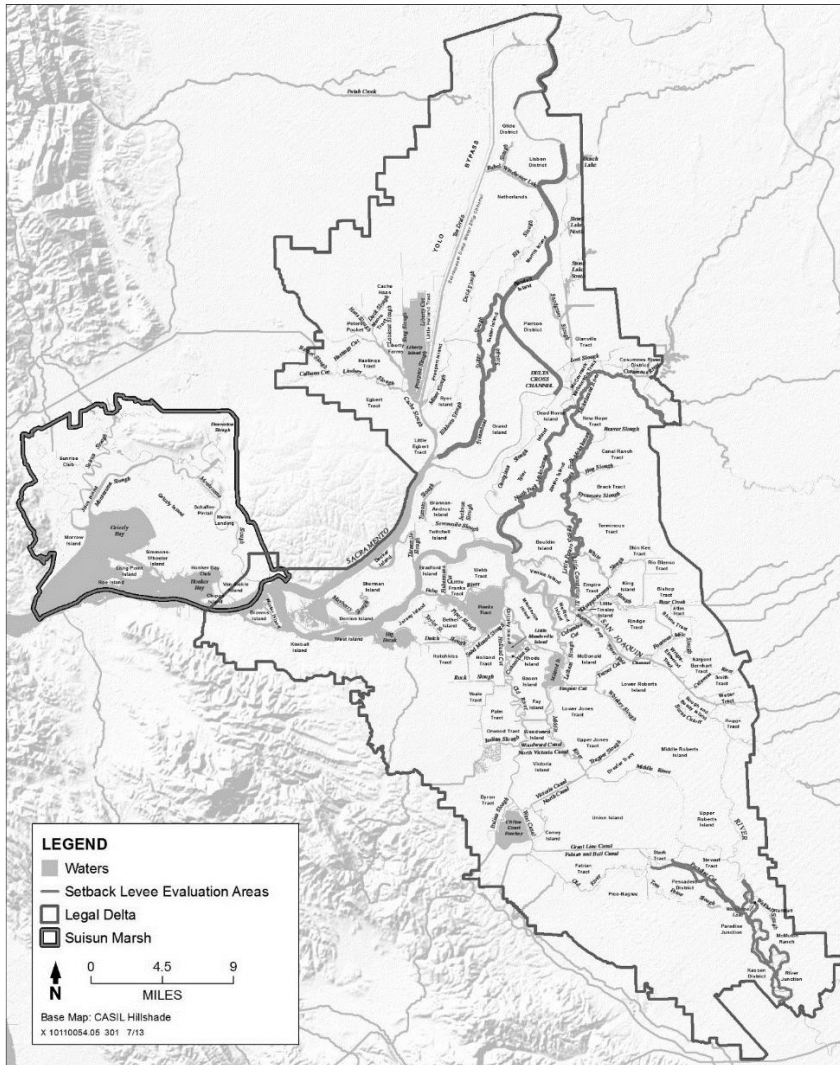
Proposed changes to the physical habitat aspects of policies and recommendations: **ER P4**

ER P4 Expand Floodplains and Riparian Habitats in Levee Projects (23 CCR section 5008)	<p>(a) Levee projects must evaluate and where feasible incorporate alternatives, including the use of setback levees, to increase floodplains and riparian habitats. Evaluation of setback levees in the Delta shall be required only in the following areas (shown in Appendix 8): (1) The Sacramento River between Freeport and Walnut Grove, the San Joaquin River from the Delta boundary to Mossdale, Paradise Cut, Steamboat Slough, Sutter Slough; and the North and South Forks of the Mokelumne River, and (2) Urban levee improvement projects in the cities of West Sacramento and Sacramento.</p> <p>(b) For purposes of Water Code section 85057.5(a)(3) and section 5001(j)(1)(E) of this Chapter, this policy covers a proposed action to construct new levees or substantially rehabilitate or reconstruct existing levees.</p>
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Proposed changes to the physical habitat aspects of policies and recommendations: **ER P4**

ER P4	Potential change	Update map in Appendix 8 to reflect changes in setback levee opportunities (due to sea level rise) and to include priority fishery corridors from Blue Ribbon Task Force Environmental Working Group and SFEI-ASC's "Identifying, Mapping, and Quantifying Opportunities for Landscape-Scale Restoration in the Sacramento-San Joaquin Delta".
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Proposed changes to the physical habitat aspects of policies and recommendations: **ER P4**



Proposed changes to the physical habitat aspects of policies and recommendations: **ER R2**

<p>ER R2</p> <p>Prioritize and Implement Projects that Restore Delta Habitat</p>	<p>Bay Delta Conservation Plan implementers, California Department of Fish and Wildlife, California Department of Water Resources, and the Delta Conservancy should prioritize and implement habitat restoration projects in the areas shown on Figure 4-8. Habitat restoration projects should ensure connections between areas being restored and existing habitat areas and other elements of the landscape needed for the full life cycle of the species that will benefit from the restoration project. Where possible, restoration projects should also emphasize the potential for improving water quality. Restoration project proponents should consult the California Department of Public Health’s Best Management Practices for Mosquito Control in California.</p> <p><u>Yolo Bypass</u>. Enhance the ability of the Yolo Bypass to flood more frequently to provide more opportunities for migrating fish, especially Chinook salmon, to use this system as a migration corridor that is rich in cover and food.</p> <p><u>Cache Slough Complex</u>. Create broad nontidal, freshwater, emergent-plant-dominated wetlands that grade into tidal fresh-water wetlands, and shallow subtidal and deep open-water habitats. Also, return a significant portion of the region to uplands with vernal pools and grasslands.</p> <p><u>Cosumnes River–Mokelumne River confluence</u>. Allow these unregulated and minimally regulated rivers to flood over their banks during winter and spring frequently and regularly to create seasonal floodplains and riparian habitats that grade into tidal marsh and shallow subtidal habitats.</p> <p><u>Lower San Joaquin River floodplain</u>. Reconnect the floodplain and restore more natural flows to stimulate food webs that support native species. Integrate habitat restoration with flood management actions, when feasible.</p> <p><u>Suisun Marsh</u>. Restore significant portions of Suisun Marsh to brackish marsh with land-water interactions to support productive, complex food webs to which native species are adapted and to provide space to adapt to rising sea level action. Use information from adaptive management processes during the Suisun Marsh Habitat Management, Preservation, and Restoration Plan’s implementation to guide future habitat restoration projects and to inform future tidal marsh management.</p>
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Proposed changes to the physical habitat aspects of policies and recommendations: **ER R2**

ER R2 Potential change Delete ER R2 and/or add a new policy (ER P6) that reflects restoration priorities.

Proposed changes to the physical habitat aspects of policies and recommendations: **ER P6**

Proposed Ecosystem Amendment Changes

Number	Description
ER P6	<p>Prioritize Restoration Actions in the Delta to Establish a Resilient, Functioning Ecosystem</p> <p>(a) To achieve establishment of a resilient, functioning estuary and surrounding terrestrial landscape capable of supporting viable populations of native resident and migratory species with diverse and biologically appropriate habitats, functional corridors, and ecosystem processes, all ecosystem restoration actions in the Delta shall be planned, designed, and implemented to:</p> <ol style="list-style-type: none">(1) anticipate sea level rise and other climate change consequences;(2) apply scientifically supported strategies in physically appropriate locations;(3) employ adaptive management;(4) have clearly articulated societal benefits; and(5) minimize environmental impacts. <p>(b) Ecosystem restoration actions in the Delta with the highest priority (Tier 1) shall have all of the following restoration priority attributes:</p> <ol style="list-style-type: none">(1) Restore ecological processes;(2) Be large scale;(3) Improve native habitat connectivity;(4) Increase native habitat complexity and diversity; and(5) Contribute to the recovery of at-risk natural communities or species. <p>(c) Ecosystem restoration actions in the Delta with lesser priorities than Tier 1, in order of importance, shall consist of the following:</p> <ol style="list-style-type: none">(1) Tier 2 actions have all of the priority attributes listed in (b)(2) through (b)(5).(2) Tier 3 actions have all of the priority attributes listed in (b)(3) through (b)(5).(3) Tier 4 actions have priority attribute (b)(5).

Discussion